REMARKS/ARGUMENTS

Claims 5-13 are active in the application. Reconsideration is respectfully requested.

Claim Objection

The objection to Claim 5 is obviated by the amendment made to the claim.

Claim Rejection, 35 USC 112

The rejection of the claim is believed to have been overcome by the amendment which specifies that the minimum amount of component (B) is 30 wt %, as this amount is disclosed on page 15, line 15 of the specification. Further, the sum of the amounts of components (A) and (B) has been indicated as 100 wt %, which limitation is believed to clarify the relative contents of components (A) and (B) of the claims. Still further, the amount of the γ-mercaptopropyltrimethoxysilane component is based on the amount of resin composition as disclosed on page 19, lines 14-16 of the text. None of the corrections are believed to gave introduced new matter into the case. Entry of the amendments is respectfully requested.

Claim Rejection, 35 USC 102

Claims 5-9 stand rejected based on 35 USC 102 as anticipated by Chawla et al, U. S. Patent 5,496,870. This ground of rejection is respectfully traversed.

Applicants maintain their position of record that Chawla et al does not anticipate the present invention. As stated Chawla et al only discloses a curable liquid resin that is prepared by the reaction of a polyol compound having a structure containing as structural units, the bivalent radicals of formulas (I) and (II), a polyisocyanate and at least one hydroxyl group containing (meth)acrylate. The number average molecular weights described in examples are

4750, 5840, 7120, 1850 and 5840, all of which are less than 10000. On the other hand, the present claims require the preparation of a urethane (meth)acrylate by the reaction of polypropylene glycol and a hydroxyl-containing (meth)acrylate and a polyisocyanate.

The Examiner replies by stating that the patent suggests the presently claimed liquid curing resin composition, because Comparative Example 1 (cols 11 and 12) discloses the use of polypropylene glycol as a reactant in a preparation, which first requires the reaction of a tolylene diisocyanate with 2-hydroxyethylacrylate in the presence of dibutyltindilaurate and a polymerization inhibitor, followed by the later addition of polypropylene glycol. However, even though a urethane (meth)acrylate is described in the example, the fact that it is a comparative example means that the results of the example are not within the scope of the invention disclosed and claimed in the patent. The composition of Comp. Ex 1 has a Young's modulus of 0.02 kg/m^2, whereas the patent at column 8, lines 52-56 discloses a desired range of 0.05 to 0.5 kg/m^2, and it is this example that is the only one which shows a urethane (meth)acrylate that is prepared from polypropylene glycol! Thus, the reference teaches that a resin prepared from polypropylene glycol is not a desirable embodiment. The patent is therefore believed not to motivate the skilled artisan to the use of the material in the preparation of a urethane (meth)acrylate.

It also must be considered with respect to Comp Ex 1 that the acrylate monomer from which the composition is prepared as identified by the name *ARONIX M113* and the ethylenically unsaturated monomer component B of the present claims have different properties. That is, the T_g value of *ARONIX M113* is -20° C, which is substantially less than the T_g value of ≥ 60° C of the present claims. (See the attached data sheet from TOAGOSE Co., Ltd.) Applicants maintain that the *ARONIX M113* having a T_g of -20° C would not readily lead the skilled artisan to the use of an acrylate monomer that has a substantially higher T_g value, i.e., ≥ 60° C. In fact, if *ARONIX M113* were to be used to prepare a cured

composition, the product obtained would be softer and therefore not desirable. Accordingly, the results and objectives of the present invention are can not be obtained with the use of *ARONIX M113*. There, in fact, is a substantial difference of adhesive force characteristics between examples where *ARONIX M113* is not used and examples (Comp Exs. 2 and 5) where *ARONIX M113* is used such as in the examples of the present invention as demonstrated in Table 2. Accordingly, not only does the patent not teach the present invention to one of skill in the art, but it also does not lead the skilled artisan to the present invention as claimed. Withdrawal of the rejection is respectfully requested.

Claims 10-13 stand rejected based on 35 USC 103 as obvious over Chawla et al, U. S. Patent 5,496,870 in view of Pinault et al. This ground of rejection is respectfully traversed.

Applicants emphasize at first that the composition of the present invention is distinguished over the composition of the Chawla et al patent for the reasons advanced on the record, and, in particular, the comments concerning the patent stated immediately above. Since the composition embodiments of Chawla et al are not believed to suggest the present composition, the method embodiments of Claims 10-13 of the present application are not obvious in view Chawla et al. Moreover, as the Examiner has pointed out, the Chawla et al patent does not disclose a method of either bonding one PET layer to another PET layer through an intervening adhesive layer, nor a PET layer to an MS plate by means of an intervening adhesive layer.

With regard to Penault et al, the patent does not show or suggest either of the claimed methods of the invention Rather, the publication discloses an integrated granule product comprised of a film having a plurality of ceramic coated granules bonded to the film by means of a cured adhesive. The coated granules contain one or more biocides, UV absorption particles, and other excipients. Such a disclosure has nothing to do with the presently claimed invention embodiments. Accordingly, withdrawal of the rejection is respectfully requested.

Claims 5-9 stand rejected based on 35 USC 102 as anticipated by Yamamura et al, U.S. Patent 6,191,187. This ground of rejection is respectfully traversed.

As applicants have stated previously, Yamamura et al discloses a coating composition which is primarily useful in the coating of optical glass fibers. While the composition disclosed in the patent contains a urethane acrylate component, the urethane acrylate component of the composition of the patent is of the type that has a preferred maximum number ave molecular weight of 10000. On the other hand, the specific urethane acrylate component (A) of the present invention must have a minimum number ave molecular weight of 10000. The urethane (meth)acrylate component of the example of the patent has a number ave molecular weight of only 4750. (More broadly, the patent at col 5, lines 56-58 discloses that the urethane (meth)acrylate polymer has a number ave molecular weight of 400 to 20000, especially preferably 700 to 10000. Thus, the reference does not show or suggest the number ave molecular weight range of the urethane (meth)acrylate polymer of 10000 to 40000.) The urethane acrylate exemplified in the patent is not made from reactants which comprise polypropylene glycol as a reactant. Rather, the patent discloses, as an OH group containing reactant, a material that is obtained by the ring opening copolymerization of two or more types of ionic-polymerizable cyclic compounds. Compounds that are formed in this manner are tetrahydrofuran and 3-methyl tetrahydrofuran which react with tolylene diisocyanate.

It also should be observed from the four examples of the Yamamura et al patent that none of the examples suggest the present composition as claimed. Note that Example 1 of the patent requires not only ARONIX M113 (nonylphenol polyethoxylate acrylate) having a T_g of -20° C as a component, but also M600A (2-hydroxy-3-phenoxypropyl acrylate) having a T_g of 17° C, as disclosed in the attached product bulletin sheet from TOAGOSE Co., Ltd. where it is identified as having the trade name of ARONIX M5700. The M600A material is

used in all four examples of the patent. It is therefore clear that the patent does not suggest the composition of the present invention that contains a component (B) that has a T_g of $\geq 60°$ C. That is, it would be difficult for one of skill in the art to conceive of a urethane acrylate composition having an unsaturated acrylate component having the significantly greater T_g of at least $\geq 60°$ C from the patent which only teaches urethane acrylate compositions formed from an unsaturated acrylate component having the significantly lower T_g values of -20 ° and 17° C of at least $\geq 60°$ C the present invention from acrylate monomers which have a comparatively low T_g of $\geq 60°$ C. Further, for the same reasons advanced above the product obtained from the teachings of the Yamamura et al patent would be expected to be softer than the product of the present invention and therefore not desirable. Moreover, the reference does not lead one of skill in the art to a composition which has the desired characteristics of excellent adhesiveness, heat resistance, water resistance and moldability and deformability, as well as excellent lamination adhesiveness for MS, PET and the like films in view of the fact that the reference relates to an optical glass fiber coating composition which is not a field of application in the present invention. Accordingly, the reference does not anticipate the invention and withdrawal of the rejection is respectfully requested.

Applicants remain of the opinion that the invention as claimed is patentable. Early notification to this effect is earnestly solicited.

Respectfully submitted,

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Product name	Grade	Chemical Nomenclature	Appearance	Viscosity(mPa?s)	Function	Tg of cured film	Characteristics
ARONIX	**M-113**	**Nonylphenol polyethoxylate acrylate**	**Pale yellow clear liquid**	**95/25C?**	**1**	**-20**	**Low curing Tg(-20?C)**
	M-210 (A-BPE4)	Bisphenol-A polyethoxylate diacrylate	Pale yellow clear liquid	800/25?C	2	75	High curability, Low irritation, High curing hardness
	M-220 (TPGDA)	Tripropyleneglycol diacrylate	Pale yellow clear liquid	12/25?C	2	90	Very low irritation, Low viscosity
	M-305 (PETA)	Pentaerythritol triacrylate	Pale yellow clear liquid	600/25?C	3	> 250	Containing OH group, High curability
	M-309 (TMPTA)	Trimethylolpropane triacrylate	Pale yellow clear liquid	85/25?C	3	> 250	High compatibility with various kinds of resin
	M-350	Trimethylolpropane polyethoxylate triacrylate	Pale yellow clear liquid	60/25?C	3	13.5	High curability
	M-402	Dipentaerythritol penta-& hexa-acrylate	Pale yellow clear liquid	5250/25?C	5-6	> 250	High curability
	M-408	Ditrimethylolpropane tetra-acrylate	Pale yellow clear liquid	500/25?C	4	> 250	High compatibility with various kinds of resin
	M-5700	**2-Hydroxy-3-phenoxy-propyl acrylate**	**Pale yellow clear liquid**	**135/25?C**	**1**	**17**	**Containing OH group, Film of Softness & high elongation**
	M-7100	Oligoester acrylate	Pale yellow clear liquid	9250/25?C	> 3	105	Film of high gloss,High curability, Film of high hardness
	M-8030	Oligoester acrylate	Pale yellow clear liquid	700/25?C	> 3	> 250	High compatibility with various kinds of resin, Heat-resistance
	M-8060	Oligoester acrylate	Pale yellow clear liquid	8500/25?C	> 3	> 250	High compatibility with various kinds of resin, Heat-resistance

Reference from http://www.toagosei.net/Products/Acrylic/Acrylic_Polymer/Aronix/aronix.htm